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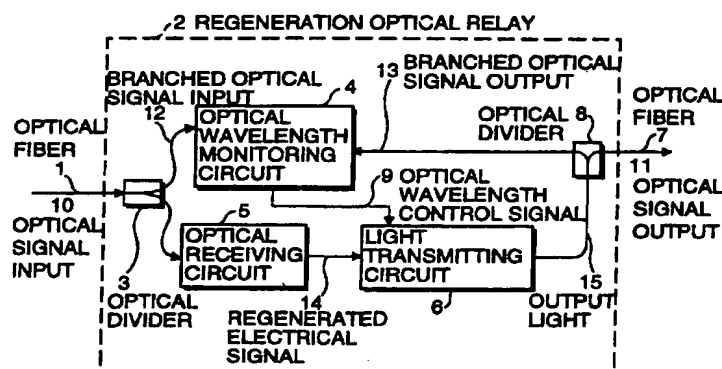
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(54) **Method and device for regeneration and relay of optical transmission signal and wavelength division multiplexing transmission system using the same**

(57) Provided are a regeneration relay 2 which comprises a light receiver 5 for converting an inputted optical signal 10 to an electrical signal, thereby outputting the electrical signal 14; a light transmitter 6 for converting the electrical signal 14 outputted from the light receiver 5 to an optical signal, thereby outputting the optical signal while varying a wavelength of the optical signal; and a wavelength monitor 4 for controlling the light transmitter 6 so that a wavelength of a light outputted from the light transmitter 6 and a wavelength of a

light inputted to the light receiver are made to be equal to each other. Provided is an optical regeneration relay used in a wavelength multiplexing transmitting system, which is capable of relaying a regenerated light with a simple constitution and facilitating a control of a wavelength of a signal on a transmitting path by monitoring a wavelength of a first stage wavelength multiplexing unit for outputting a signal to the transmitting path.

**Fig.2**



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EUROPEAN SEARCH REPORT

Application Number  
EP 99 11 3627

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	EP 0 421 449 A (FUJITSU LTD) 10 April 1991 (1991-04-10)	1	H04B10/16 H04J14/02
A	* abstract; claim 1; figures 1,6,8 *	15,17	
Y	EP 0 841 768 A (CSELT CENTRO STUDI LAB TELECOM) 13 May 1998 (1998-05-13)	1	
A	* abstract; figures 1,2 *	2,5,12	
A	EP 0 732 786 A (NIPPON ELECTRIC CO) 18 September 1996 (1996-09-18)	1,4,8, 15-17	
	* abstract; figures 3,4 *		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H04B H04L H04J
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>26 January 2001</b>	Examiner <b>Goudelis, M</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p> <p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons  &amp; : member of the same patent family, corresponding document</p>			

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 99 11 3627

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26-01-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0421449 A	10-04-1991	JP 2020274 C	19-02-1996
		JP 3205938 A	09-09-1991
		JP 7038648 B	26-04-1995
		CA 2027051 A,C	07-04-1991
		US 5097353 A	17-03-1992
EP 0841768 A	13-05-1998	IT T0960896 A	07-05-1998
		CA 2220244 A	07-05-1998
		JP 10154959 A	09-06-1998
		US 5917633 A	29-06-1999
EP 0732786 A	18-09-1996	JP 2723067 B	09-03-1998
		JP 8248457 A	27-09-1996
		DE 69604001 D	07-10-1999
		DE 69604001 T	31-05-2000
		US 5644423 A	01-07-1997

EPO FORM P009

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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